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REMARKS

Entry of this Amendment if proper because it narrows the issues on appeal and does not require further search by the Examiner.

Claims 1-20 are all the claims presently pending in the application. Claims 11-20 have been withdrawn. Claims 1-10 have been amended to more clearly define the claimed invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 3, 4, 6-8, and 10 stand rejected under 35 U.S.C. § 112, second paragraph and claims 1-10 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 1, 2, 4-6, and 8-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anzai (U.S. Patent No. 5,923,933) combined with Japanese Patent No. 2000-267338.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention is directed to an image forming method which includes developing an electrostatic latent image formed on an image carrier with a developing device into a toner image using toners, transferring said toner image onto a recording medium, and fixing said toner image transferred onto said recording medium to thereby form a recorded image on a recording sheet.

In the claimed invention, a peripheral speed ratio ($S1 = Vm1 / Vp$) between the peripheral speed ($Vm1$) of said first developing roller and the peripheral speed (Vp) of said image carrier is set in the range of 0.8 - 2.0, and a peripheral speed ratio ($S2 = Vm2 / Vp$) between the peripheral speed ($Vm2$) of said second developing roller and the peripheral speed (Vp) of said image carrier is set in the range of 1.05 - 2.0. In addition, the shape coefficients $SF1$, $SF2$ of said toners of the developing agent respectively satisfying the following conditions: $120 \leq SF1 \leq 170$ and $110 \leq SF2 \leq 130$.

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Conventional printing methods may use a center feed developing systems to provide an improved image quality (Application at page 5, lines 10-14). However, in such a system a high-speed printing operation produces increased stress on the developing agent, shortening the life of the developing agent and destabilizing an image quality (Application at page 5, lines 15-24).

In the claimed invention, on other hand, the shape coefficient SF2 is selected to provide a desired toner fluidity between the first and second developing rollers. This allows the present method to maintain the life of the developing roller, obtain a good cleaning property, and stabilize an image quality even at high speeds (e.g., $V_p=1800$ mm/s) (Application at page 22, lines 18-21).

II. THE 35 USC §112, SECOND PARAGRAPH REJECTION

The Examiner alleges that claims 3, 4, 6-8, and 10 are indefinite under 35 U.S.C. § 112, second paragraph. Applicant notes that these claims have been amended to address the Examiner's concerns.

Therefore, Applicant submits that these claims are clearly not indefinite. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. THE 35 USC §112, FIRST PARAGRAPH REJECTION

The Examiner alleges that claims 1-10 are not enabled under 35 U.S.C. § 112, first paragraph. Applicant submits, however, that these claims are enabled by the specification.

Specifically, the Examiner alleges that the Application describes a magnetic developing agent "consisting mainly of toners and magnetic carriers", whereas the claims define a magnetic developing agent "including toners and magnetic carriers" which the Examiner alleges, includes an agent which includes other ingredients "in amounts greater than the toners or magnetic carriers".

However, Applicant submits that the Examiner incorrectly reads the term "mainly" in the specification as describing an amount or quantity of toner and carriers. Indeed, the term "main" does not necessarily mean the "most quantity".

In fact, Applicant submits that the word "main" is defined as "chief" or "principal" (*Webster's Universal Encyclopedic Dictionary*, 2002 Ed., Barnes and Noble Books, page

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104). Thus, the present Application describes a magnetic developing agent in which the "chief" or "principal" ingredients may include toner and magnetic carriers. That is, the toner and magnetic particles are not necessarily the most present ingredients in the magnetic developing agent, but may be some of the most important ingredients in the magnetic developing agent.

Indeed, the Examiner's fallacious interpretation would require that a "main" ingredient is always present in the highest percentage of a composition. This is clearly not correct. For example, the Examiner should consider a medicine tablet which may consist of a large percentage of binders, sugars, etc, but only a small percentage of the "active ingredient". Certainly, in that case, the "main" ingredient would likely be considered the "active ingredient" in spite of the fact that it makes up only a small amount of the tablet.

Further, with respect to the rejection of claims 3, 4, 7 and 8 based on the ranges for the speed ratios S1 and S2, and the rejection of claims 5, 6, 9 and 10 based on the toner and carrier particle diameters, Applicant submits that the claims have been amended to address the Examiner's concerns.

Therefore, Applicant respectfully submits that these claims are adequately enabled by the specification. Therefore, the Examiner is respectfully requested to withdraw this rejection.

IV. THE ANZAI AND JP '338 REFERENCES

The Examiner alleges that Anzai would have been combined with JP '338 to form the claimed invention. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Anzai discloses an electrophotographic apparatus in which the sliding friction force, the moving speed and the developing agent in a developing region of two developing rollers and an electric characteristic of a photosensitive body used for image development are matched. Specifically, a ratio of the sliding friction force between a magnetic brush for the developing agent and the photosensitive body formed in the first developing roller and the sliding friction force between a magnetic brush for the developing agent and the photosensitive body formed in the second developing roller is within a range of 0.9 to 2.1

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(Anzai at Abstract).

JP '338 discloses a electrophotographic toner having allegedly improved powder characteristics, such as storage stability and good in offset resistance. The toner contains at least a binder resin and a colorant and a wax, and this wax has a heat absorption starting temperature of 40-120°C measured by a differential scanning calorimeter and a melting point of 80-120°C and a melt velocity of 1-200 centipoise at 120°C, and the toner particles have a form coefficient SF-1 of 130-160, and SF-2 of 110-140 (JP '338 at Abstract).

However, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are directed to different problems and solutions. Specifically, Anzai is directed to a method in which the ratio of sliding friction force is matched with other features to allegedly provide a uniform image, whereas, JP '338 is not directed to a method including two developing rollers, and teaches that toner shape coefficients should be in defined range to provide good offset resistance. Therefore, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, the Examiner merely states that it would have been obvious to combine these references to obtain "an image forming method that provides fixed toned images on recording media without offset and without unpleasant odors". However, the Examiner's stated motivation to combine is completely unrelated to at least one objective of the claimed invention (e.g., improving image quality during a high-speed printing operation) and, therefore, is insufficient to support the alleged combination.

Moreover, neither Anzai, nor JP '338, nor any combination thereof teaches or suggests "*wherein said shape coefficient SF2 is selected to provide a desired toner fluidity between said first and second developing rollers*" as recited in claims 1 and 2.

As noted above, unlike conventional printing methods in which a high-speed printing operation produces increased stress on the developing agent, shortening the life of the developing agent and destabilizing an image quality, in the claimed method, the toner shape coefficient SF2 is selected to provide a desired toner fluidity between said first and second developing rollers (Application at page 19, line 21-page 21, line 21). Specifically, in one

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exemplary embodiment, the inventors have found that when the shape coefficient SF2 is selected to be within the claimed range (e.g., $110 \leq SF2 \leq 130$), the toner fluidity between the developing agent distributing member 8 and the developing rollers 61, 62 is good, thereby preventing excessive stress on the developing agent (Application at page 20, line 14-page 21, line 10; Figure 1).

Clearly, these novel features are not taught or suggested by the cited references. Indeed, neither Anzai, nor JP '338 even mention a problem (e.g., excessive stress caused on the toner between the developing agent distributing member and the developing rollers) which the claimed invention is intended to address.

Indeed, the Examiner expressly concedes that Anzai does not teach or suggest these novel features (Office Action at page 12). In fact, Anzai expressly states that parameters (e.g., friction ratios) other than the shape coefficients should be set to provide improved image quality in a center feed developing system. Therefore, Anzai teaches away from the claimed invention.

The Examiner alleges that JP '338 makes up for the deficiencies of Anzai. However, the Examiner is clearly incorrect.

In fact, as noted above, JP '338 is merely directed to a single roller system and does not teach or suggest a center feed developing system. However, as explained in the Application, the problem with excessive stress on the developing agent is realized in center feeding developing systems. Therefore, JP '338 cannot possibly teach or suggest the problems of a center feed developing system, let alone the solution proposed by the claimed invention.

Therefore, JP '338 clearly does not teach or suggest a printing method in which the toner shape coefficient SF2 is selected to provide a desired toner fluidity between said first and second developing rollers. Therefore, contrary to the Examiner's allegations, JP '338 does not make up for the deficiencies of Anzai.

Therefore, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

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V. FORMAL MATTERS AND CONCLUSION

In response to the Examiner's objection to claims 5 and 9 on page 9 of the Office Action, Applicant submits that these claims have been amended to address the Examiner's concerns.

Further, a Submission of Replacement Drawing Sheets is filed concurrently herewith and includes replacement sheets for drawing sheets 1 and 2, in accordance with our proposed corrections filed on June 4, 2003.

In view of the foregoing, Applicant submits that claims 1-20, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment was filed by facsimile with the United States Patent and Trademark Office, Examiner Janis L. Dote, Group Art Unit # 2852 at fax number (703) 872-9319 this 24th day of November, 2003.



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